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SECTION II - SIGNIFICANCE OF PARAPSYCHOLOGY IN THE USSR

1. (U) The Soviet Union is well aware of the benefits and applications of parapsychology research. In 1963, a Kremlin edict apparently gave top priority to biological research, which in Russia includes parapsychology (74). The major impetus behind the Soviet drive to harness the possible capabilities of telepathic communication, telekinetics, and bionics is said to come from the Soviet military and the KGB (57). Today it is reported that the USSR has twenty or more centers for the study of parapsychological phenomena, with an annual budget estimated in 1967 at over 12 million rubles (13 million dollars) and reported to be as high as 21 million dollars (1,57,75).
2. (U) According to a report by Velinov (76), Soviet interest in biocommunications was clearly indicated in 1965 when the Department of Bioinformation of the Scientific and Technical Society of Radio Engineering and Telecommunications was established at the Popov Institute in Moscow. Its stated objectives are to discuss physical, biological, and philosophical aspects of bioinformation and to acquaint the Soviet scientific community with biocommunications research conducted outside the Soviet Union.
3. (U) Soviet parapsychology research was actually stimulated by the 1960 French story (77) concerning the US atomic submarine Nautilus. The French journalists splashed the now rather infamous Nautilus story in headlines "US Navy Uses ESP on Atomic Sub!" Ship to shore telepathy, according to the French, blipped along nicely even when the Nautilus was far under water. "Is telepathy a new secret weapon? Will ESP be a deciding factor in future warfare?" The speculating French sensationalized, "Has the American military learned the secret of mind power?" In Leningrad the Nautilus reports went off like a depth charge in the mind of L.L. Vasilev. In April of 1960, Doctor Vasilev, while addressing a group of top Soviet scientists stated:

"We carried out extensive and until now completely unreported investigations under the Stalin regime. Today the American Navy is testing telepathy on their atomic submarines. Soviet scientists conducted a great many successful telepathy tests over a quarter of a century ago. It's urgent that we throw off our prejudices. We must again plunge into the exploration of this vital field." (78)

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Although the US Navy subsequently denied the reports of telepathic testing on atomic submarines, the Soviet hierarchy apparently heeded Doctor Vasilev's advice and gave support, both moral and financial, to his dynamic view that: "The discovery of the energy underlying telepathic communication will be equivalent to the discovery of atomic energy (62).

4. (U) Since 1962, Doctor Vasilev has headed a special laboratory for biocommunications research at the University of Leningrad. Major aspects of the work of this laboratory are to conduct research and to develop machines capable of monitoring, testing and studying telepathic communication (79).

5. (U) In 1963, Doctor Vasilev claimed to have conducted successful long-distance telepathic experiments between Leningrad and Sevastapol, a distance of 1200 miles, with the aid of an ultra-short-wave (UHF) radio transmitter. As a result, Doctor Vasilev was convinced that his experiments, and those he conducted jointly with the Moscow-based Bekhterev Brain Institute, offered scientific proof of telepathic communications. His next goal was to identify the nature of brain energy that produces it (59).

Theorizing on the above experiments, one Soviet scientist suggested that telepathic impulses are radiated along the lines of bits of information in a cybernetic system. Another scientist is known to be working on the idea of time as energy, speculating that telepathic transmissions may be propagated through a supposed time-energy system, rather than through the electromagnetic field.

6. (U) Soviet research into biocommunications phenomena does not appear to be earth-bound and limited to inner space, but apparently extends to outer space as well. The so-called Father of Soviet Rocketry, K.E. Tsiolkovsky, stated that:

"In the coming era of space flights, telepathic abilities are necessary. While the space rocket must bring men toward knowledge of the grand secrets in the universe, the study of psychic phenomena can lead us toward knowledge of the mysteries of the human mind. It is precisely the solution of this secret which promises the greatest achievements." (80)

There are reports that the Soviets are training their cosmonauts in telepathy to back-up their electronic equipment while in outer space. One of these back-up schemes is known to involve coded

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telepathic messages. This method was previously demonstrated in March 1967, when a coded telepathic message was flashed from Moscow to Leningrad (81). The involvement of astronauts or cosmonauts in telepathy experiments is not necessarily unprecedented. In February 1971, during the Apollo 14 flight to the moon, astronaut Edgar Mitchell made 150 separate attempts to project his thoughts from inside the space capsule back to an individual on earth. The results of the Apollo 14 experiments have been well-documented in detail and are published in the Journal of Parapsychology (82). Further documentation of Mitchell's experiments can be found in the University of California Newsletter (83).

7. (U) There are numerous reports on Soviet applications of clairvoyance, hypnotism, dowsing, etc., in military operations. In the case of dowsing, this is also not unprecedented, since US forces have employed dowsing in Vietnam for locating enemy tunnels and caches. With respect to brain and mind control/conditioning, a recent report indicates that the Soviet Union has made great strides in emotional training and conditioning. Soldiers are being taught to set their own emotional tone in battle and stress situations. Further, astronauts are being taught through such mental conditioning to distort time and to offset boredom in outer space (84).

8. (U) Man's sight and hearing are limited to a relatively small range of wavelengths, other living beings often possess much wider perceptive capabilities, both with regard to sharpness of perception and range of stimuli. For example, dogs hear higher sound frequencies than man; bats and dolphins orient themselves by means of an ultra-sound radar; bees perceive colors even in the ultraviolet part of the spectrum; some snakes perceive minute differences in temperature and orient themselves by means of thermoreceptors. Certain living beings even react to stimuli to which man is absolutely insensitive. Some species of fish and homing pigeons, for instance, react to changes of the electric or magnetic field in their surroundings (59). In view of these perceptive processes, it has been difficult to differentiate between those sensory processes which are merely sharpened or highly honed and those that are extra or super-normal. Certain military advantages would come from the application and control of these perceptive processes. For example, such application and control could be used in the detection and identification of animate objects or humans through brainwave interactions, mass hypnosis or mind control through long-distance telepathy, thermal receptors, and sensitivity to changes in magnetic/electrical/gravitational fields.

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9. (U) According to observations made by Doctor Montague Ullman (M.D.) during a trip to the Soviet bloc countries in the fall of 1970, Soviet biocommunications investigations are effectively combining the use of modern and sophisticated technology with basic pragmatic approaches. This was evident, he states, in their approach to long-distance telepathy experiments where the results were analyzed in physiological (electroencephalographic data) as well as psychological task performance (transmission of data in Morse Code) (85). Doctor Ullman further observed that the Soviet researchers seemed intent on confirming the existence of a new form of energy, referred to as bioplasma, which they maintain is characteristic of life processes and represents matter in the form of an integrated system of elementary charged particles. Such energy, through interaction with other systems, is thought to provide the basis for biocommunications (86).

10. (C/NFD) The above commentary documents a clear case for research in the Soviet Union in parapsychology. It is significant because of the energy and resources being allotted for this work in the Soviet Union and because of its military implications especially in mind manipulation and controlled offensive behavior. The more sinister aspects of paranormal research appear to be surfacing in the Soviet Union. Why else would Soviet researchers make the statement:

"Tell America that the psychic potential of man must be used for good." (75)

SECTION III - THE APPORT TECHNIQUE

1. (U) The following discussion on apports and astral projection is not intended to be an endorsement for its scientific verification or even its existence. However, reputable scientists in the USSR and the US are keenly interested in this phenomenon. Areas that appear to have potential must be discussed, even if only briefly.

2. (FOUO) According to Welk (87), a costly weakness in our intelligence system, to a large extent, is an inability to use effectively the resources of the science of parapsychology (there are some definite indicators that the Soviets realize the potential of "psi" which will be reported later in this section). Whenever parapsychology is mentioned, most people are likely to think of ESP. However, there are other types of parapsychological phenomena which are just as important militarily as ESP. Welk claims, based on many Soviet sources, that the so-called "apport" technique is likely to meet valuable intelligence needs. When

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fully developed, this technique would make possible the abduction of actual objects (including documents) in enemy territory and their transfer to friendly territory. Objects so abducted are known as "apports." They could be returned to the point of origin without the enemy becoming aware of this temporary abduction.

3. (U) Some of the world's most eminent scientists from the late 1800's and early 1900's have claimed to have witnessed apport phenomena. These include Sir William Crookes (1832-1919), British chemist and physicist, discoverer of the element thallium and former president of the British Association for the Advancement of Science (88); Alfred Russel Wallace (1823-1913), British naturalist and co-discoverer, with Charles Darwin, of the theory of evolution (89); Johann K.F. Zoellner (1834-1882), professor of physical astronomy at the University of Leipzig, Germany (90).

4. (U) In the discussion of such an esoteric subject as apports, it is deemed sufficient to relate only one experience claimed to have occurred to Sir William Crookes. The interested reader can consult the non-cited bibliography for further references. The following account is taken from pp. 87 and 88 of reference 88:

"Class IX. The Appearance of Hands, either Self-luminous or Visible by Ordinary Light."

....."I (William Crookes) will here give no instances in which the phenomenon has occurred in darkness, but will simply select a few of the numerous instances in which I have seen the hands in the light.

.....I have more than once seen, first an object move, then a luminous cloud appear to form about it, and lastly, the cloud condense into shape and become a perfectly formed hand.... It is not always a mere form, but sometimes appears perfectly life-like and graceful, the fingers moving and the flesh apparently as human as that of any in the room. At the wrist, or arm, it becomes hazy, and fades off into a luminous cloud. To the touch, the hand sometimes appears icy cold and dead, at other times warm and life-like, grasping my own with the firm pressure of an old friend. I have retained one of these hands in my own, firmly resolved not to let it escape. There was no struggle or effort made to get loose, but it gradually seemed to resolve itself into vapor and faded in that manner from my grasp."

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5. (U) It is a known fact that the Soviet Union takes the appearance of luminous bodies very seriously as evidenced by the Kirlian photography of the human body's aura (91). It appears that the Soviets may be considering that a hand which appears out of nowhere and can grasp, "with the firm pressure of an old friend," another person may have first-rate military possibilities. There has been some discussion recently about the prospects of being able to control the apport technique to a point of sophistication where individuals could control these "luminous clouds." The individuals who have studied these effects (real or otherwise) have suggested that since these bodies can travel unlimited distances and are able to pass through solid material (walls), they might well be used to produce instant death in military and civilian officials. It is further conjectured that these bodies could disable military equipment or communication nets.

6. (U) If one reads the cases and experiments mentioned here, as well as references two through nine under PART II of the non-cited bibliography, he can make certain deductions. If any of this highly questionable material is true then it can be inferred that organic matter can be transformed into "ectoplasm," that this can be rendered invisible and impalpable and thus converted into something which, for all practical purposes, amounts to force. If organic matter can be converted into such "force-matter," it seems reasonable to assume that a physical object, if similarly converted, could travel through space.

7. (U) Two things are certain: (1) that parapsychological phenomena are due to the little-known faculties of the subconscious mind; and (2) that the powers of the subconscious mind are vastly superior to those of the normal consciousness. The fantastic memory of the subconscious mind (sometimes referred to as "photographic memory") is a well-established fact. So is its extraordinary mathematical ability, which has baffled trained mathematicians no end. It seems probable that some of these little-understood faculties of the subconscious mind have something to do with its ability to put together again an object which it had previously disintegrated, and to manipulate the forces involved in this process. The only way one can learn more about these little-understood processes is through intensive study and experimentation. The stakes seem high enough.

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8. (U) While the process by which matter is converted into "force-matter" (and vice versa) may not be understood, nevertheless, one is faced with the possibility that the human mind can disintegrate and reintegrate organic matter - a feat which seems far more complex than the disintegration and reintegration of, say, a stone, a piece of wood, paper, etc. Experiments show that a human body which has lost about half its weight can be reintegrated without loss of normal functions. Since this is possible, it does not seem safe to exclude - without further investigation - the possibility that inorganic matter might undergo a similar disintegration and reintegration. After all, apport phenomena in which physical objects have passed through solid walls have been observed and attested to by some of the world's most eminent scientists as well as by a host of other responsible witnesses. In view of what the human mind has demonstrated it can do with organic matter, and in view of the very real Soviet threat in this sector, the science of parapsychology should be investigated to its fullest potential, perhaps to the benefit of national defense.
9. (U) According to Pullman (92), Director of the Southeast Hypnosis Research Center in Dallas, Texas, before the end of the 1970s, Soviet diplomats will be able to sit in their foreign embassies and use ESP (in this case a form of the apport technique) to steal the secrets of their enemies. (See also reference 91, p. 216) Pullman states that a spy would be hypnotized, then his invisible "spirit" would be ordered to leave his body, travel across barriers of space and time to a foreign government's security facility, and there read top-secret documents and relay back their information. Such "astral projection" already has been accomplished in laboratory settings, Pullman said, adding that the Russians are probably now trying to perfect it. Pullman further states that the Soviets are at least 25 years ahead of the US in psychic research. According to Pullman, the Soviets have realized the immense military advantage of the psychic ability known as astral projection (out-of-the-body travel). In this reference, details are given for some of Pullman's work in the US with astral projection. Other scientists and mediums interested in this work are professor H.A. Cahn of Northern Arizona University (92), Doctor Charles Tart of the University of Southern California (91,92), and Doctor V. Inyushin of Alma-ata (91). Sybil Leek, noted astrologer and author, states, "there is great danger that within the next ten years the Soviets will be able to steal our top secrets by using out-of-the-body spies." Further reading, although much older, can be found in a book by Muldoon and Carrington (93). Suggested background reading on astral projection can be found in an excellent article by J. Fraser Nicol in Psychic (94).

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SECTION IV - ESP AND PSYCHOKINESIS

1. (U) The reader by this time has realized that it is very difficult to speak of one area of psychic phenomenon without overlapping into other areas. There really can be no distinct separation, for example, between apports and certain aspects of telepathy; hypnosis also enters into this area. In an attempt to illustrate the various subjects in parapsychology, however, artificial sections were established. This is the reason for a separate part in apports and ESP. Some aspects of hypnosis, depending on its ultimate use, falls within parapsychology, some areas into medicine; therefore, hypnosis is presented as a separate section outside of this parapsychology discussion.

2. (U) Soviet research in ESP was started in the 1920's at Leningrad University by V.M. Bekhterev. In his early work, Bekhterev collaborated with V.L. Durov to investigate the effects of mental suggestion on a group of performing dogs (62). It was believed that telepathic communication depended on electromagnetic radiation. Doctor L.L. Vasilev (95-97), shown in Illustration One, at the Bekhterev Brain Institute set out to identify these electromagnetic waves that carry telepathy. By 1937, Vasilev had amassed evidence that known electromagnetic waves do not carry telepathy. Tests were conducted in electrically shielded chambers and over extreme distances denying the passage of electromagnetic fields (98). Some of the long range telepathy experiments have been published (63,99,100) explaining the various techniques employed including classical tests with Zener cards and more unique tests with strobe lights and codes.



Illustration One - Professor L.L. Vasilev, pioneer Soviet parapsychologist considered the father of Soviet psychical research.

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3. (U) Professor L. Vasilev died in late 1965 or early 1966 and the task of continuing telepathy research was taken by Doctor I. Kogan. Doctor Kogan is chairman of the Bio-Information Section of the Popov Radio and Technical Institute in Moscow. This individual is still trying to wed telepathy to the electromagnetic spectrum (101,102). Discussion as to the existence of telepathy has been bandied about the Soviet Union (103) and elsewhere (104) for some time. For the sake of research the Soviet Union accepts the validity of ESP even though the argument as to the mode of transmission continues. Professor E.K. Naumov (105), Chairman of the Division of Technical Parapsychology at the A.S. Popov Institute mentioned above, conducted long range telepathy tests from Moscow to several other cities. Illustration Two is a photograph of Naumov with associates.



Illustration Two - Sender Y. Kamenshi (left), Soviet physicist, and receiver K. Nikolaev, Soviet actor, with parapsychologist Edward K. Naumov (far right).

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4. (U) In 1967, the Soviet Maritime News reported, "Cosmonauts, when in orbit, seem to be able to communicate telepathically more easily with each other than with people on earth. A psi (short for psychic faculty) training system has been incorporated in the cosmonaut training program," but the News provided no further details. Some informal reports relayed to Ostrander and Schroeder (106) indicate that the Soviets are working on psi systems for space use, involving not just telepathy, but also precognition.

5. (S/NFD) Kogan's systematic parapsychology research (102) could also be of potential value to the overall Soviet cybernetic research and development program. Efforts being made to optimize sensory inputs in the interest of controlling the quality of human motor activity are well known, as is the ultimate Soviet goal of achieving a perfect cybernetic man. It is of interest that both conventional psychology and parapsychology programs are headquartered in Moscow, although as depicted in the personnel and institute section the trend is decentralization, is probably no coincidence and supports the view that the latter program should not be taken lightly (63).

6. (U) As mentioned above, the Soviets seem preoccupied with the search for the energy that carries or facilitates telepathy transmission. Is it electromagnetic or not? The search for this unknown energy has led the Soviets to Kirlian photography; named after its inventors Semyon and Valentina Kirlian. The Kirlians developed a technique of photographing with a high frequency electrical field involving a specially constructed high frequency spark generator, tuned up and down between 75,000 to 200,000 electrical oscillations per second. Their first photographs showed turquoise and reddish-yellow patterns of flares coming out of specific channels within leaves. A magnified picture of a finger showed craters of light and flares (Illustration Three). By the 1960s research on bioluminescence revealed by Kirlian photography was going on in many Soviet universities. Perfected techniques of photographing the play of high-frequency currents on humans, plants and animals, as well as on inanimate matter have set the Soviets on some striking discoveries about the energetical nature of man. "Bio-plasma" is a term coined by the Soviets for bioluminescent phenomenon or energy. Scientists at the Kazakh State University at Alma-ata have found that illnesses tend to show up in advance as a disordered play of flares from the "bio-plasma" long before they manifest in the physical body. According to Ostrander and Schroeder, the Soviets may be attempting to link Kirlian photography with computers, among other things, to instantly analyze the spectra of colors appearing in the vari-colored flares from the living body.

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7. (C) It is believed that if there is any positive basis for Kirlian photography and the "bio-Plasma" body of humans, the Soviets may be closer than is thought on the controlled use of the apport techniques and possible astral projection phenomenon.
8. (U) Doctor A. Podshibyakin, an electrophysiologist at the Institute of Clinical Physiology in Kiev, has found that by charting acupuncture points a correlation exists between the "bio-plasma" and changes on the surface of the sun. At the exact moment solar flares (sun spots) occur, there are changes in the electrical potential of the skin's acupuncture points. These electrical charges are measured by a tobiscope (probably a simple wheatstone bridge device). In some way, the "bio-plasma" of the body is sensitive to these solar explosions the instant they occur even though it takes about two days for the cosmic particles to reach the earth.
9. (U) The most significant use of Kirlian photography is in the area of psychokinesis or mind over matter (PK). Doctor Genady Sergeyev (75) of the A.A. Uktomskii Military Institute in Leningrad believes Kirlian photography may uncover the mechanism of PK. Sergeyev is a prominent mathematician for the Soviet military who works closely with an electrophysiologist from the University of Leningrad, Doctor L. Pavlova. Sergeyev has devised important mathematical and statistical methods for analyzing the EEG (107) which allowed parapsychologists to follow and depict the actions of telepathy in the brain (108). The type of work reported by Sergeyev in 1967 and 1968 is just now beginning to appear in the US efforts to understand the transmission of telepathy (109,110). Sergeyev has conducted several years of intensive lab research on the outstanding PK psychic in Leningrad, Nina Kulagina (pseudonym Nelya Mikhailova). Illustration Four is a photograph of Doctor G. Sergeyev and Illustration Five is a photograph of Mrs. Kulagina. Sergeyev registered heightened biological luminescence radiating from Kulagina's eyes during the apparent movement of objects by PK. Sergeyev postulates that the "bio-plasma" of the human body must interact with the environment to produce PK. Sergeyev emphasizes when target objects are placed in a vacuum, Kulagina is unable to move them. Barcus (111) in the United States reports some unusual occurrences during psychic photography especially of the eyes. Reportedly, Kulagina has caused the movement of a wide range of non-magnetic objects: (under strict scientific control) large crystal bowls, clock pendulums, bread,

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matches, etc. In one test, a raw egg was placed in a salt solution inside a sealed aquarium six feet away from her. Researchers report she was able to use PK to separate the yoke from the white of the egg. Observations by Western scientists of Mrs. Kulagina's PK ability has been reported with verification of her authentic ability (112,113). These same Western scientists have reported that as of February 1971, they have not been able to visit or observe Mrs. Kulagina. A veil of secrecy has been placed on Sergeyev and Mrs. Kulagina for unknown reasons.

10. (U) Rather than simply observing PK, the Soviets typically turned to instrumentation. Mrs. Kulagina was subjected to a number of physiological electronic measuring devices and tested for important body functions during her PK demonstrations. The Soviets found that at the moment an object begins to move, all of Mrs. Kulagina's body processes speed up drastically - heart, breathing, brain activity - and the electromagnetic fields around her body all begin to pulse in rhythm. Soviet researchers postulate that it was these rhythmic "vibrations" that cause objects to be attracted or repelled to her. Illustration Six shows a photographic sequence of Kulagina's PK ability.

11. (C/NFD) Scientists report (113) that Kulagina has been able to stop the beating of a frog's heart in solution and to re-activate it! This is perhaps the most significant PK test done and its military implications in controlled offensive behavior, if true, are extremely important.

12. (U) Space does not permit a discussion on other important parapsychological phenomena such as eyeless sight (75,114-129), which appeared to be more of a fad than anything else. However since the mid 1960s, the "eyeless sight" fad has subsided and serious research has proceeded quietly at the State Pedagogical Institute in Sverdlovsk, off bounds to foreigners (75). Space in this report does not permit a discussion of psychotronic generators, devices which are reported to be able to store human bio-plasmic forces for later use (75). For further reading on ESP, see the non-cited bibliography; Section V, numbers 12-30.

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SECTION V - SUMMARY AND MILITARY IMPLICATIONS

1. (U) The following discussion is based on a report by Ostrander and Schroeder (75). The authors ask the question, "Is ESP a weapon of war?" All research on ESP in the USSR is funded by the government. The authors claim that their sources indicate that psi research with military potential is well-financed by the Soviet Army, KGB, and other paramilitary agencies. Soviet scientists doing psi research in nonmilitary areas often have trouble obtaining funds. Doctor Milan Ryzl (131) reports that secret psi research associated with state security and defense is going on in the USSR. Communist state authorities, the military and the KGB display an unusual, disproportionate interest in parapsychology. The Soviets are attempting to apply ESP to both police and military use (See appendix VI for biographic data on Ryzl). According to Ryzl, some years ago a project was begun in the USSR to apply telepathy to indoctrinate and re-educate antisocial elements. It was hoped that suggestion at a distance could induce individuals, without their being aware of it, to adopt the officially desired political and social attitudes. Research in this field of endeavor will hopefully become clearer in the section on hypnosis later in this report. Reports of psi research in Soviet submarines help confirm military involvement in parapsychology. According to Stone (74), there is clandestine psi research going on at the Pavlov Institute of Higher Nervous Activity in Moscow, the Durov Institute, and certain areas in Siberia. Obviously, telepathy and clairvoyance would make ideal additions to a spy arsenal and such undercover groups are constantly said to be supporting ESP research in the USSR. "One conclusion seems justified," says Doctor Ryzl (130). "Parapsychology in Communist countries and especially the USSR occupies a strong position. We can expect it to be developed with determination." According to Ostrander and Schroeder, the USSR is ahead of the US in certain areas of technical psi research. The authors report that the USSR is ahead of the US in discoveries about the physical essence of the human being and how psi functions in and through us. They are ahead of the US in uncovering the basic energy behind psi. They are ahead of the US in attempts to control factors like the influence of magnetic weather on psi tests. They appear to be ahead of the US in seeking out and creating conditions that unlock the psi potential present in every human being.

2. (U) In summary, what is the strategic threat posed by the current "explosion" in Soviet parapsychological research? Soviet efforts in the field of psi research, sooner or later, might enable them to do some of the following:

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a. Know the contents of top secret US documents, the movements of our troops and ships and the location and nature of our military installations.

b. Mold the thoughts of key US military and civilian leaders, at a distance.

c. Cause the instant death of any US official, at a distance.

d. Disable, at a distance, US military equipment of all types including space craft.

3. (U) It is generally conceded that the above four areas sound like science fiction, however, the literature appears to support (b) as being the most possible use of psi phenomena during the time frame of this study. Again from Ostrander and Schroeder who cite Oliver Caldwell, an expert on Soviet affairs and past-acting commissioner for International Education in HEW, as follows:

"I am amazed at the skepticism and sometimes hostility which I encounter when I try to tell Americans about some of the experimentation which is taking place in the USSR in parapsychology and related fields. I find this strange because there is available documentation in translation which substantiates most of the things I saw in the USSR. I am really disturbed, because if the United States does not make a serious effort to move forward on this new frontier, in another ten years it may be too late."

4. (U) In closing this section on parapsychology a quote from astronaut Edgar D. Mitchell, Jr. is appropriate (131).

"Extrasensory perception is not a matter of belief. There is a great deal of serious scientific work being done in it, and it has been established over the last thirty years that it is a matter of probability, and the probabilities have been established beyond chance. I think it is an important work. I happen to be curious about it, and thus have been pursuing it for many years. This happened to be an opportunity (Apollo 14 lunar mission) to do another little step - a piece in the scientific puzzle of what man's all about."

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PART III

MENTAL SUGGESTION AND CONTROLLED BEHAVIOR

SECTION I - HYPNOSIS

PART A - The Use of Hypnosis in Medicine - USSR

1. (U) In the latter half of the nineteenth century, many French and German researchers began to use hypnosis as a therapeutic aid and to study the way in which it worked. In the Soviet Union, pioneer work in hypnosis was undertaken by V. Danilyevski, A. Tokarski, and V. Bekhterev (see Part II, Section IV).
2. (U) V. Danilyevski discovered that the major characteristics shown by man in a state of hypnosis, such as lower sensitivity, "wax-like" flexibility of muscles and joints, and suppressed movements, were also typical of animals in a similar state. This led him to assert that hypnosis in man was identical in nature to hypnosis in animals. A. Tokarski proved that hypnosis and suggestion, like other psychical phenomena were determined entirely by the influence of the environment on man. He wholeheartedly supported the view that hypnosis was an effective treatment for a wide variety of disorders. V. Bekhterev applied hypnosis widely for treatment. He maintained that verbal suggestion played a big role in developing a state of hypnotic sleep; physical stimuli merely facilitated the achievement of this state. I. Pavlov advanced a scientifically based theory of the nature of hypnosis and its potential use as a method of treatment. In 1935 he described hypnosis as "the standard method in the physiological struggle against the pathogenic agent." Pavlov's school gave experimental support to the view that hypnosis was a specific variety of sleep, long before that view had been arrived at empirically. This view had already been advanced in the last century by most doctors and scientists who were concerned with the theory of hypnosis and its application to therapeutic practice. On the basis of experiments on animals and later on humans, the phasic suppression theory developed into a firm physiological foundation for understanding hypnosis and suggestion and the way in which they work. The theory held that hypnotic sleep is a transitional stage between wakefulness and sleep and that there is an active "watch" point in the cerebral cortex of both hemispheres (rapport).
3. (U) The three generally recognized stages of hypnosis are sleepiness, hypotaxia, and somnambulism or, respectively, light, medium and deep hypnosis. At the first stage of hypnosis, the

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unconditioned responses in most cases hardly differ from the responses in wakefulness. At the second stage, altered unconditioned vascular responses begin to prevail over normal vascular responses to stimulation, and thus give evidence of hypnotic phases in the cortex of both hemispheres. The suppression process is most obvious with regard to extent and intensity at the third stage, the deep stage of hypnosis known as somnambulism. Since there is no vascular response to most of the unconditioned stimuli, this means that complete suppression prevails. The rare unconditioned vascular reflexes are of small magnitude, are extended in time and are characterized by a prolonged latent period.

4. (U) Soviet psychotherapists believe that hypnosis is one of the leading methods for the treatment of mental disorders. The Soviets concentrate on the "word" as an adequate stimulus for the development of the hypnotic state. The tremendous role played by the emotional message carried by the word should not be overlooked. The psychotherapist will achieve results depending on the emotional content of the entire system of contact with the patient. The greater the emotional content the better the results. Soviets recommend that the psychotherapist takes into account not only the meaning of what he is trying to achieve through suggestion, but also the emotional content of his work, his contact with the patient, his confidence in his own abilities, and the effectiveness of psychotherapeutic treatment in general.
5. (U) The Soviets believe that the hypnotic state offers the researcher the means of penetrating into the physiological fundamentals of human thought and behavior. The Russians conceive of no other state (hypnosis) which would enable the scientist to simplify human thought by splitting it into its component parts thus permitting him to get to the root of this most complex of nature's phenomena, to control and subordinate it for purposes of research. K. Platonov, the patriarch of Soviet psychotherapists said (132): "I still maintain that hypnotherapy is the main stem of psychotherapy. Hypnotherapy helps us understand better the mechanisms of all other forms of psychotherapy and, therefore, to master them better."
6. (U) The Soviets stress the use of hypnosis in patients suffering from disorders of the gastrointestinal tract especially if neurotic symptoms accompany such disorders. They further stress the use of hypnotherapy in surgical cases thus providing for a decrease in anesthetic and drug usage. Hypnosis is also being studied for its effectiveness in treating alcohol addiction. At first they approached this problem with the idea of developing an emotionally negative

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nauseous reflex to the taste and smell of alcoholic drinks; this method was later abandoned for lack of positive results. The method now employed is to instill in the patient the view that excessive drinking will inevitably lead to physical and mental destruction. The Soviets seek to change the patient's mental outlook on alcohol and to convince them that drinking is impermissible for moral and ethical reasons. In other words, mental manipulation or behavior alteration.

PART B - Hypnosis and Controlled Behavior

1. (U) The possible military uses of hypnotism has many rather bizarre applications. Although there is no concrete proof that hypnosis will play an important role in controlling behavior in military situations, some uses will be mentioned. Biderman and Zimmer (133) discuss hypnosis and other possible alternatives for defense against brainwashing.
2. (U) The following discussion is based on a report by Estabrooks (134). According to the author, the facts and ideas presented are, so to speak, too true to be good, but no psychologist of standing would deny the validity of the basic ideas involved. Of interest to this discussion are some of the more unfamiliar facets of hypnotism which make it of use in warfare. If hypnosis can be used to advantage, we can rest assured that it will be so employed.
3. (U) One in every five adult humans can be placed into the hypnotic state - somnambulism - of which they will have no memory whatsoever when they awaken. From the military viewpoint there are a few facts which are of great interest. Can this prospective subject be hypnotized against his will? Obviously no POW will be cooperative if he knows that the hypnotist is looking for military information, nor will any ordinary citizen if he suspects that the operator will use him to blow up a munitions plant. The answer to this vital question is yes though hypnotists prefer to say "without his consent" instead of "against his will." There are disguised techniques available for hypnotizing an unsuspecting or unwilling subject. The Soviets believe that telepathy may be one such method.
4. (U) Multiple personality can be caused by hypnotism. One could deliberately set up a condition of multiple personality to further the ends of military intelligence and in the development of the "super spy." In his normal waking state which is called Personality A, or PA, this individual will become a rabid communist.

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He will join the party, follow the party line and make himself as objectionable as possible to the authorities. Note that he will be acting in good faith. He is a communist, or rather his PA is a communist and will behave as such. Then develop Personality B (PB), the secondary personality, the unconscious personality. This personality is rabidly American and anti-communist. It has all the information possessed by PA, the normal personality, whereas PA does not have this advantage. The proper training of a person for this role would be long and tedious, but once he was trained, one would have a super spy compared to any creation in a mystery story. The super spy plays his role as a communist in his waking state, aggressively, consistently, fearlessly. But his PB is a loyal American, and PB has all the memories of PA. As a loyal American, he will not hesitate to divulge those memories, but be sure he has the opportunity to do so when occasion demands. Here is how this technique would work. Let us choose the Cubans as examples. One could easily secure, say, one hundred excellent hypnotic subjects of Cuban stock, living in the United States, who spoke their language fluently, and then work on these subjects. In hypnotism one would build up their loyalty to our country; but out of hypnotism, in the "waking" or normal state, one would do the opposite, striving to convince them that they had a genuine grievance against this country and encouraging them to engage in fifth column activities. So one builds up a case of dual personality. They would be urged in the waking state to become fifth columnist enemies to the United States, but also point out to them in hypnotism that this was really a pose, that their real loyalty lay with this country, offering them protection and reward for their activities. Through them one would hope to be kept informed of the activities of their "friends," this information, of course, being obtained in the trance state. They would also be very useful as "plants" in concentration camps or in any other situations where it was suspected their services might be of use to our intelligence department. Once again these people would have a great advantage over ordinary "informers." Convinced of their own innocence, they would play the fifth column role with the utmost sincerity. This conviction of innocence would probably be their greatest protection. Again, if suspected, no one could obtain from them any useful information. Only a very few key people could throw them into the trance and, without this, any attempt to get information would be useless. There are some difficulties that would be encountered in building up an organization of such personnel. Hardly one somnambulist in ten or even a hundred according to Estabrooks would be suitable for such spy work; and the determining of this suitability would be a difficult task. But, Estabrooks reports, it could be done, and once accomplished would repay amply for all the trouble.

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5. (U) The possibility of creating assassins through hypnotic techniques on POWs exists. As was pointed out above, the subject does not need to be willing to enter into such a condition. Once the captive has been placed in a suitable hypnotic state then one need only to establish the post-hypnotic suggestion or plan for the assassination. After the prisoner is released and returned to his organization, he will carry out his assignment through his unconscious state, while appearing perfectly rehabilitated in his wakeful state. The main problem in the assassin plan is in the area of post-hypnotic reinforcement. There have been some ideas mentioned that suggest one needs to establish the reinforcement pattern during initial hypnosis; some object that will reinforce his goal whenever he looks at it, hears a certain sound, etc. The real problem for the friendly forces is the detection of these mentally altered individuals. At the present time there is no fool proof method of detection. There is no test by which one can discover these agents. Blood pressure, heart rate, electroencephalograph, psychogalvanic reflex, all these devices which one can use to detect the most subtle bodily changes are worthless for there are no bodily changes. Drugs, at least for the present, appear to be of no value. Further, there are certain safeguards that the hypnotic method provides for the enemy. Most important is the conviction of innocence which the man himself has. He would never "act guilty" and if ever accused of seeking information would act quite honestly indignant, the conviction of innocence on the part of the agent is perhaps his greatest safeguard under questioning by our authorities. The Soviets are aware of the above mentioned possibilities and appear to be using certain aspects of psi research in order to manipulate an individuals mental behavior toward these activities.

PART C - Artificial Reincarnation Through Hypnosis

1. (U) Vladimir L. Raikov, M.D., a Soviet psychiatrist, has claimed that hypnotic phenomenon can be utilized for what he claims to be "artificial reincarnations." For example, Raikov claims that it is possible to hypnotically suggest to a girl who studies violin that she is the virtuoso violinist Fritz Kreisler. It is interesting to note, says Raikov, that her manner of playing at this time is reminiscent to that of Kreisler. If so desired, it is also possible to create this capacity in an awake state. Raikov has converted persons who have no desire to paint, invent complex machines, or to play music into masters through hypnosis. Raikov reports that he is able to evoke this mental alteration only when the subject is in an exceedingly deep trance which is

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5. (U) Where the Soviets are going to go with Raikov's work is open to conjecture. There is some indication that the Soviets believe that Raikov's work and the CCAP device may unlock many of the mysteries behind ESP and other psi phenomena. If any of the above is true, this work may be a new way of looking inside and catching the subtle interplay between thought and body, psyche and soma. The CCAP device may have a much wider use than charting the mental states of reincarnated artists.

PART D - Telepathic Hypnosis

1. (U) According to Ostrander and Schroeder (75), the ability to put people to sleep and wake them up telepathically from a distance of a few yards to over a thousand miles became the most thoroughly tested and perfected contribution of the Soviets to international parapsychology. It is reported that the ability to control a person's consciousness with telepathy is being further studied and tested in laboratories in Leningrad and Moscow. The work was started in the early 1920s but was not publicized until the early 1960s. The work was begun by K.O. Kotkov, a psychologist from Kharkov University, in 1924. Kotkov could telepathically obliterate an experimental subject's consciousness from short distances or from the opposite side of town. The work was documented by Vasilev (62) who conducted research of his own but could not reveal it under Stalin's regime. The reality of telepathic sleep-wake, backed by columns of data, might be the most astonishing part of Vasilev's experiments in mental suggestion. See reference 62, pages 75 through 88.

2. (U) Parapsychologists in Leningrad and Moscow are involved in the telepathic manipulation of consciousness, now recording successes with the EEG. Doctor V. Raikov (see PART C of this section) is involved in this EEG research as well as E. Naumov. Naumov reports that mental telepathy woke up a hypnotized subject (by telepathy) six of eight times. Naumov remarked that as soon as the telepathic "wake up" is sent, trance becomes less and less deep, full consciousness returning in twenty to thirty seconds (137). In the Leningrad laboratory of Doctor Paul Gulyaiev (Bekhterev Brain Institute), friends of subjects have been trained to put them to sleep telepathically (138).

3. (U) Why are the Soviets again hard at work on the telepathic control of consciousness? Doctor I. Kogan, like Vasilev, is probably doing it for theoretical reasons; still trying mathematically to prove that an electromagnetic carrier of telepathy is possible. Why other scientists may be delving into control

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of consciousness by ESP is another question. During telepathic sleep is an individual simply dreaming his own private dreams or does someone else hold sway? The current Soviets have not divulged the psychological details about their telepathic manipulation of consciousness. Vasilev describes some revelations in his book (62) but little else has been reported. Doctor Stefan Manczarski of Poland predicts that this new field of telepathy will open up new avenues for spreading propaganda. He feels that the electromagnetic theory is valid and believes, therefore, that telepathy can be amplified like radio waves. Telepathy would then become a subtle new modus for the "influencers" of the world (139). Doctor Manczarski's wave ideas are still very debatable, but what about telepathy someday becoming a tool for influencing people?

4. (U) Hypnotizing someone telepathically probably comes over as a more eerie, mystifying, almost diabolical act in the US than it does in the Soviet Union. The US is really just becoming adjusted to some of the aspects of hypnotism. Since the turn of the century, the Soviets have been exploring and perfecting the various advantages that hypnotism provides. In the Soviet Union, hypnotism is a common tool like X-rays, used in medicine, psychotherapy, physiology, psychology, and experimental pedagogy.

5. (U) The Soviets have been reportedly working on the effects of drugs used in combination with psychic tests. Vasilev used mescaline in the early days and more recently M.S. Smirnov, of the Laboratory of Vision, Institute of Problems of Information Transmission of the USSR Academy of Science, has been obtaining psychic success with psilocybin (140).

6. (U) The tests that Vasilev had perfected may have a more interesting future in them than the developer had imagined. Manipulating someone else's consciousness with telepathy, guiding him in trance.....colorful uses are too easy to conjure. The ability to focus a mental whammy on an enemy through hypnotic telepathy has surely occurred to the Soviets. In espionage, one could telepathically hypnotize an individual with the post-hypnotic suggestion to steal classified documents or detonate important military equipment. The mission is accomplished and the individual does not even know that he has done anything. Ryzl (see appendix VI) stated in Psychic (141), "The bulk of recent telepathy research in the USSR is concerned with the transmission of behavior impulses - or research to subliminally control an individual's conduct." Visiting Soviet psi labs in 1967, Doctor Ryzl says

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he was told by a Soviet, "When suitable means of propaganda are cleverly used, it is possible to mold any man's conscience so that in the end he may misuse his abilities while remaining convinced that he is serving an honest purpose." (140) Ryzl continues, "The USSR has the means to keep the results of such research secret from the rest of the world and, as practical applications of these results become possible, there is no doubt that the Soviet Union will do so." What will ESP be used for? "To make money, and as a weapon," Ryzl states flatly.

SECTION II - CONDITIONING THROUGH SUGGESTION

PART A - Hypnopedias

1. (U) The subject of hypnopedias or sleep-learning has been openly discussed in the Soviet literature for the past decade (142-161). One of the most thorough Soviet reports has been prepared by Bliznichenko (162) in 1966. Dodge and Lamont (163) have published a report that covers the field of hypnopedias in the Soviet Union through 1968. Further elucidation of this subject in this report, with the exception of a discussion of possible trends in this area since 1969, is believed to be redundant and unnecessary.
2. (U) The last decade of Soviet hypnopedias research has led them into new concepts of memory improvement. It is believed that areas such as subliminal perception and subconscious learning with hypnosis were borne from the basic research involved in hypnopedias training. The most recent indication of new Soviet interest in utilizing the subconscious as a reserve for the retention of facts is a booklet written by L.I. Kuproyanovich (164). This book describes the equipment and technical means used for improving memory as well as the prospective uses of cybernetics for memory retention. One of the more interesting features of this book is a discussion on subliminal acquisition of facts. This is an area of concern when one is speaking of conditioned behavior or mental alteration. It is also an area seldom discussed in open Soviet literature. PART B of this section will briefly discuss some Soviet work in subliminal perception and possible uses for this technique.
3. (U) The following discussion on memory and hypnopedias is based on Kuproyanovich's report. The author states that the subconscious is one of the unused reserves for the retention of facts. Memory operation on the subconscious level takes place without our realizing

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PART X

ELECTROMAGNETIC EFFECTS

1. (U) Over a span of years which exceeds that of a century, numerous researches and observations have been conducted and published on the physiological and psychological effects of electric fields. As Davis (293) has stated in his exhaustive review of the subject, not much of substance has derived from all the attention which has been paid to the physiological effects on living organisms of placing them in environments which have been changed by manipulating one or more electromagnetic parameters. Somewhat more in the way of positive findings has been published as they relate to the psychological effects. There appears to be more literature from Soviet sources than from Western sources concerning the effects of electromagnetic fields on the central nervous system.
2. (U) A question was raised concerning the possible hazard to personnel working with a device which generated very high field density electromagnetic pulses. Of particular concern was the possibility that people working on an object which was to be subjected to the pulse might themselves receive the energy by virtue of a premature triggering or some other mischance. The generator created an electromagnetic field in the form of a pulse which had a duration of 3×10^{-9} sec, at a voltage of 1.0 megavolt. In essence, a Van de Graaf generator was used to charge a bank of high capacity condensers. The condensers were discharged into a load consisting of an array of aerial wires so that a high potential difference was caused to exist between them and a grounded metal mesh plate beneath. With the breakdown of the air dielectric an intense pulsed field was created. On one occasion when the generator was being tested after its erection, a bird flew under the aerial wires just as it was pulsed. The bird fell from the sky and flopped about in a rather disorganized way for a minute or so. It then appeared to regroup all those things which birds must have in order to fly, and flew off about its avian business apparently none the worse for the experience. This incident was unsettling to those working with the generator, so a search was made in the literature for something germane which would indicate whether or not a hazard to operating personnel existed. This literature search was reported by Hirsch et al (294). According to Hirsch, not very much was found except for a paper by Salvingnac et al (1967) which related to the psychomotor disturbances in air crews when their airplanes were struck by lightning. The density of the electromagnetic fields to which these people were exposed

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was probably of the same order of magnitude and duration as was that associated with the EMP generator, since a lightning bolt generates a cylindrical electromagnetic field of about 10 megavolts at its center with the density decreasing toward the periphery. The duration is about 6 microseconds. Salvingnac described the psychomotor disturbances as a "slowing of thought processes and psychomotor reactions" from which the people recovered within a brief period apparently without permanent damage.

3. (C) The above information concerning pulsed electromagnetic energy could have behavior implications just as the photic-flicker "experiments" described in PART VI could have. The "slowing of thought processes and psychomotor reactions" could lead to behavioral changes effecting the ability of an individual to perform a critical task such as piloting an aircraft. It cannot be determined if the report mentioned above initiated or accelerated Soviet research in the area of the psychological or behavior effects of electromagnetic energy. Since the early 1960s, the Soviets have been publishing reports on the effects of electromagnetic and magnetic fields on the central nervous system of animals. Although the Soviet reports do not contain specific reference to effects on humans, the data would give one the impression that they have extensive knowledge of the subject as it might apply to humans.
4. (U) One of the more outstanding publications from the Soviet Union is a book prepared by Yu. Kholodov (295). The book is a compilation of Soviet and Western work in the area of electromagnetic effects on the central nervous system. The bibliography to the book contains 455 entries. A large portion of the text directs itself to the subject of the changes in conditioned reflexes and sensitivity to light in birds, rabbits, and fish. The effects of ultrahigh and superhigh frequencies on the electrical activity of the rabbit brain is extensively discussed. A report on constant magnetic fields is also presented. Although the book addresses physiological responses, it points out that the Soviets have considerable knowledge and a keen interest in the field of electromagnetic energies.
5. (U) The UCLA Brain Information Service in Los Angeles is a bibliographic collector of information which is pertinent to this discussion. The service has compiled an extensive bibliographic list on the biological effects of electromagnetic fields (below visible frequencies) especially on the central nervous system. The list contains many Soviet references. However, the list is constructed around research that addresses the physiological aspects and not the psychological or behavior effects (296).

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6. (U) A Soviet review article concerning the effects of superhigh frequency (wavelength of from one millimeter to one meter) on the central nervous system is worth incorporation into this report. Although the work is primarily physiological, it is meaningful because it contains some of the important areas of interest to the Soviets and could be correlated to Soviet work with other frequencies. Kholodov (297) reports that the effect of SHF on the functions of the central nervous system is of particular interest. So far, few studies have dealt with this subject. Kholodov contends that foreign investigators (chiefly American) use an SHF field with an intensity on the order of tens of watts/sq cm, which results in a considerable heating of the brain (above 40 degrees C). Depending upon the duration of the radiation, mice and rabbits have stopped eating for some time, or have made spasmodic movements, and even died. Post-mortem examination of the animals have shown that the action of the powerful SHF field has resulted in destruction of the brain cells. Especially extensive destruction has been observed in the inter-brain and mid-brain. When the head of a monkey is exposed to a strong SHF field, the animal behaves normally for the first minute or two, and then covers his eyes and starts to go to sleep. But a minute later he wakes up; the rate of respiration increases; the pupils dilate despite the bright illumination; and there is a heavy secretion of saliva. After some time the monkey begins to shake with convulsions and utter cries. If the radiation is discontinued, by the following day the monkey in no way differs from other monkeys who have not been exposed to radiation. If exposure is continued, the animal dies after a few minutes. Experiments have shown that when men or animals are exposed to radiation, there is a change in the sensitivity to sound, light, and olfactory stimuli. A study of the receptors in the skin, the gastrointestinal system, and the circulatory system has shown slight changes in them after exposure to the action of SHF. Consequently, the SHF field can act on the first link in the reflex arc. At the same time, SHF may act directly on the central nervous system. On the other hand, the appearance of slow waves in the record of the biological currents of the cerebral cortex, the inhibition of reflex activity, and the appearance of various vegetative reactions indicate action of the SHF field on the inter-brain, where the higher vegetative centers are located. The data from physiological experiments check very well with the results from morphological investigations. After exposure to SHF, reversible structural changes were observed in the cerebral cortex and in the inter-brain. It may be assumed that those areas of the brain are the most sensitive to the action of an SHF field, although if the intensity or duration of the action is increased, other

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parts of the central nervous system will also participate in the reaction. Kholodov concludes by stating that only further experiments will help us to explain the mechanism of the direct action of an SHF field of nonthermal intensity. But it can already be stated that these effects can be produced by an electromagnetic field other than one of super-high frequency.

7. (U) Although Kholodov's article is early 1960, it points out the interests the Soviets had over a decade ago; for that matter, Vasilev was working with electromagnetic radiation in the 1930s in his investigations of the transport methods for ESP. It is evident that the effects of electromagnetic frequencies below visible light on man are of interest to the Soviets. Kholodov states that there is a change in the sensitivity in man to sound, light, and olfactory stimuli. One can only make certain guesses as to the possible relationship in Soviet research between electromagnetic radiation effects and behavioral responses to other stimuli that they are working with.

8. (C) Christian (298) reports that the Soviet use of infrared to cause gross damage to human targets is conjectural. However, Christian in his report states that studies are being conducted in the USSR which would lead one to conclude that infrared is being considered as an anti-personnel weapon. Temporary blindness, even of long duration, does not endanger the eye and yet is quite serious when it alters the behavioral response of pilots or sentries to their mission. Despite an extensive review of Soviet literature on the effect of infrared radiation on humans, Christian could find no reports on psychological effects. There was only one report on behavior effects of infrared radiation. A report by Dul'dier (299) states that a temporary loss of work capacity among workers in hot shops, such as foundries, is directly related to the dose of infrared received. He found somewhat surprisingly, that temporary loss in working capacity is found more frequently with younger workers, those on the job less than five years, than the more experienced workers.

9. (U) One report has appeared in the Soviet literature relating to the behavior effects of ultraviolet radiation. A study by Al'bitskaya (300) seems to show that ultraviolet radiation can show a decrease in the latent period of speech reaction during association testing. Al'bitskaya studied the effect of 136-400nm ultraviolet radiation on 15-16 year-old technical school students as measured by their response in a conditioned reflex situation and the length of the latent period in motor and speech reactions.

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She concludes that the response system based on speech is more excitable than the response system based on sensory perception since it can be stimulated by ultraviolet radiation.

10. (U) Low frequency electromagnetic fields have been found by Kevanishvili and Zhgenti to generate sonic and ultrasonic oscillations in living organisms (301). These oscillations produce elastic deformations in the organism. If the frequency of the outside field corresponds to the oscillation frequency of the cells, the latter deteriorate as the result of the mechanical resonance.

11. (U) More recently, research at the Riga Medical Institute has shown that high-tension static electrical fields affect the neurohumoral regulatory systems (301). Work is now apparently underway that is investigating the possibility of an effect of strong electrical fields as the energy balance of living objects at this institute.

12. (U) Sweeney (302) has prepared a study on the biological effects of electromagnetic radiation in the range of 3 to 300,000 mHz. The study covers research in the Eurasian communist countries. This exhaustive report again contains primarily information on the effects of electromagnetic radiation as it applies to physiological responses, not psychological or behavioral.

13. (C) Since almost all of the Soviet data on electromagnetic radiation (below visible) applies to physiological response, one can only imply that they have substantial knowledge of the psychological effects. Even if psychological or behavioral research is under way in the USSR, it is doubtful that they would publish it. There have been certain indications in the past that the Soviets may be actively engaged in weapons research employing electromagnetic radiation. Doctor V.V. Meriakri, the Director of the Institute of Radio Engineering and Electronics of the Soviet Academy of Sciences stated during an early 1969 visit to the United States, that he is studying the radiation absorption properties of biological fluids.

It is impossible to assess the truth of this assertion on the basis of this information alone. Much more information about Meriakri and his research organization is needed.

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